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NASA Procedural Requirements

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Subject: NASA Systems Engineering Processes and Requirements w/Change 1 (11/04/09)

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Appendix I. Additional Reading

The following documents were used as reference materials in the development of this SE NPR. The documents are offered as informational sources and are not evoked in this SE NPR, though they may be referenced.

1. MIL-STD-499B (draft), Systems Engineering.
2. ISO/IEC 15288, System Life Cycle Processes.

ISO/IEC 15288 defines international system life processes plus for any domain (e.g., transportation, medical, commercial).

3. ANSI/EIA 632, Processes for Engineering a System.

EIA 632 is a commercial document that evolved from the never released, but fully developed, 1994 Mil-Std 499B Systems Engineering. It was intended to provide a framework for developing and supporting universal SE discipline for both defense and commercial environments. EIA 632 was intended to be a top-tier standard further defined to lower level standards that define specific practices.

IEEE 1220 is a second-tier standard that implements EIA 632 by defining one way to practice systems engineering.

4. CMMI model.

The Capability Maturity Model[®] (CMM) IntegrationSM (CMMI) in its present form is a

collection of best practices for the "development and maintenance" of both "products and services." The model was developed by integrating practices from four different CMMs, the "source models" the CMM for software, for systems engineering, for integrated product development (IPD), and for acquisition. Organizations can use the model to improve their ability to develop (or maintain) products (and services) on time, within budget, and with desired quality. CMMI also provides these organizations the framework for enlarging the focus of process improvement to other areas that also affect product development, i.e., the discipline of systems engineering. During the past decade, new and effective concepts for organizing developmental work have surfaced and been adopted, such as concurrent engineering or the use of integrated teams. Organizations using (or wishing to adopt these ideas) can also find support in the CMMI by using the model with integrated product and process development (IPPD) additions.

5. Defense Acquisition University Systems Engineering Fundamentals. Ft. Belvoir, Virginia: Defense Acquisition University Press, December 2000.

6. International Council on Systems Engineering Systems Engineering Guide.

7. ISO/IEC TR 19760, Systems Engineering A Guide for the Application of ISO/IEC 15288 (System Life Cycle Processes).

8. AS9100: Quality Management Systems Aerospace Requirements. G-14 Americas Aerospace Quality Group.

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